

**AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL
ACT**

In accordance with the provisions of the Arkansas Water and Air
Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann.
8-4-101 et seq.), and the Clean Water Act (33 U.S.C. 1251 et seq.),

Cedar Chemical Corporation
49 Phillips Road 311
Helena, AR 72342

is authorized to discharge from a facility located at

Highway 242 South in Section 14, Township 2 South, Range 4
East in Phillips County, Arkansas.

Latitude: 34° 31' 13"; Longitude: 90° 39' 10"

to receiving waters named:

Mississippi River in Segment 6B of the Mississippi River
Basin.

The outfall is located at the following coordinates:

Outfall 002:Latitude : 34° 29' 55"; Longitude: 90° 35' 29"

in accordance with effluent limitations, monitoring requirements,
and other conditions set forth in Parts I, II (Version 2), III, and
IV (Version 2) hereof.

This permit shall become effective on June 1, 2002

This permit and the authorization to discharge shall expire at
midnight, May 31, 2007

Signed this 31st day of May, 2002

Chuck C. Bennett
Chief, Water Division
Arkansas Department of Environmental Quality

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002-treated process wastewater, washdown/cleanup water, scrubber water, cooling tower blowdown and condensate, weak acid distillate and storm water++++

During the period beginning on the effective date and lasting through date of expiration, the permittee is authorized to discharge from outfall serial number 001. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Mass (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Monthly Avg	Daily Max	Monthly Avg	Daily Max		
Flow (MGD)+	N/A	N/A	N/A	N/A	Continuous	Record
Biochemical Oxygen Demand (BOD5)	89.83	415.95	Report mg/l	Report mg/l	Once/week	24-hr composite
Total Suspended Solids (TSS)	101.26	343.14	Report mg/l	Report mg/l	Once/week	24-hr composite
Chemical Oxygen Demand (COD)	505.50	730.15	Report mg/l	Report mg/l	Once/week	24-hr composite

40 CFR Part 455 Table 4 BAT Limits (Priority Pollutants)

1,1-Dichloroethylene	N/A	N/A	16 µg/l	25 µg/l	Once/quarter	24-hr composite
1,1,1-Trichloroethane	N/A	N/A	21 µg/l	54 µg/l	Once/quarter	24-hr composite
1,2-Dichloroethane	N/A	N/A	68 µg/l	211 µg/l	Once/quarter	24-hr composite
1,2-Dichloropropane	N/A	N/A	153 µg/l	230 µg/l	Once/quarter	24-hr composite
1,2-Dichlorobenzene	N/A	N/A	77 µg/l	163 µg/l	Once/quarter	24-hr composite
1,2-trans-Dichloroethylene	N/A	N/A	21 µg/l	54 µg/l	Once/quarter	24-hr composite
1,3-Dichloropropene	N/A	N/A	29 µg/l	44 µg/l	Once/quarter	24-hr composite
1,4-Dichlorobenzene	N/A	N/A	15 µg/l	28 µg/l	Once/quarter	24-hr composite
2-chlorophenol	N/A	N/A	31 µg/l	98 µg/l	Once/quarter	24-hr composite
2,4-Dichlorophenol	N/A	N/A	39 µg/l	112 µg/l	Once/quarter	24-hr composite
2,4-Dimethylphenol	N/A	N/A	18 µg/l	36 µg/l	Once/quarter	24-hr composite
Benzene	N/A	N/A	37 µg/l	136 µg/l	Once/quarter	24-hr composite
Bromodichloromethane	N/A	N/A	142 µg/l	380 µg/l	Once/quarter	24-hr composite
Bromomethane	N/A	N/A	142 µg/l	380 µg/l	Once/quarter	24-hr composite
Chlorobenzene	N/A	N/A	15 µg/l	28 µg/l	Once/quarter	24-hr composite
Chloromethane	N/A	N/A	86 µg/l	190 µg/l	Once/quarter	24-hr composite
Cyanide (Total)	N/A	N/A	220 µg/l	640 µg/l	Once/quarter	24-hr composite
Dibromochloromethane	N/A	N/A	196 µg/l	794 µg/l	Once/quarter	24-hr composite
Dichloromethane	N/A	N/A	40 µg/l	89 µg/l	Once/quarter	24-hr composite
Ethylbenzene	N/A	N/A	32 µg/l	108 µg/l	Once/quarter	24-hr composite
Lead (Total)	N/A	N/A	320 µg/l	690 µg/l	Once/quarter	24-hr composite
Naphthalene	N/A	N/A	22 µg/l	59 µg/l	Once/quarter	24-hr composite
Phenol	N/A	N/A	15 µg/l	26 µg/l	Once/quarter	24-hr composite
Tetrachloroethylene	N/A	N/A	22 µg/l	56 µg/l	Once/quarter	24-hr composite
Tetrachloromethane	N/A	N/A	18 µg/l	38 µg/l	Once/quarter	24-hr composite
Toluene	N/A	N/A	26 µg/l	80 µg/l	Once/quarter	24-hr composite
Tribromomethane	N/A	N/A	196 µg/l	794 µg/l	Once/quarter	24-hr composite
Trichloromethane	N/A	N/A	21 µg/l	46 µg/l	Once/quarter	24-hr composite

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Mass (lb/day)		Other Units (specify)		Measurement	Sample
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Frequency	Type
<u>40 CFR Part 455 Table 2 BAT Limits (Pesticides)++</u>						
2,4-D	0.0160	0.0490	N/A	N/A	Once/quarter	24-hr composite
2,4-D Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
2,4-DB Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Acephate	0.00493	0.0160	N/A	N/A	Once/quarter	24-hr composite
Acifluorfen	14.880	39.200	N/A	N/A	Once/quarter	24-hr composite
Alachlor	0.0385	0.129	N/A	N/A	Once/quarter	24-hr composite
Aldicarb	0.00780	0.0181	N/A	N/A	Once/quarter	24-hr composite
Ametryn	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Atrazine	0.0430	0.128	N/A	N/A	Once/quarter	24-hr composite
Azinphos Methyl	0.353	0.685	N/A	N/A	Once/quarter	24-hr composite
Benfluralin (2)	0.00273	0.00805	N/A	N/A	Once/quarter	24-hr composite
Benomyl and Carbendazim (3)	0.224	0.875	N/A	N/A	Once/quarter	24-hr composite
Bolstar	0.218	0.423	N/A	N/A	Once/quarter	24-hr composite
Bromacil	2.900	9.575	N/A	N/A	Once/quarter	24-hr composite
Bromacil, lithium	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Bromoxynil	0.0318	0.0988	N/A	N/A	Once/quarter	24-hr composite
Bromoxynil octanoate	0.0318	0.0988	N/A	N/A	Once/quarter	24-hr composite
Busan 40 (6)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Busan 85 (7)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Butachlor	0.0385	0.130	N/A	N/A	Once/quarter	24-hr composite
Captafol	0.0000328	0.000106	N/A	N/A	Once/quarter	24-hr composite
Carbam-S (8)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Carbaryl	0.0183	0.0400	N/A	N/A	Once/quarter	24-hr composite
Carbofuran	0.000700	0.00295	N/A	N/A	Once/quarter	24-hr composite
Chloroneb	0.828	2.0400	N/A	N/A	Once/quarter	24-hr composite
Chlorothalonil	0.0114	0.0378	N/A	N/A	Once/quarter	24-hr composite
Chlorpyrifos	0.00608	0.0206	N/A	N/A	Once/quarter	24-hr composite
Cynazine	0.0833	0.258	N/A	N/A	Once/quarter	24-hr composite
Dazomet	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
DCPA	0.660	1.948	N/A	N/A	Once/quarter	24-hr composite
DEF (9)	0.140	0.288	N/A	N/A	Once/quarter	24-hr composite
Diazinon	0.0280	0.0705	N/A	N/A	Once/quarter	24-hr composite
Dichlorprop Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Dichlorvos	0.000738	0.00240	N/A	N/A	Once/quarter	24-hr composite
Dinoseb	35.750	118.250	N/A	N/A	Once/quarter	24-hr composite
Dioxathion	0.323	0.850	N/A	N/A	Once/quarter	24-hr composite
Disulfoton	0.0948	0.184	N/A	N/A	Once/quarter	24-hr composite

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Mass (lb/day)		Other Units (specify)		Measurement	Sample
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Frequency	Type
Diuron	0.104	0.235	N/A	N/A	Once/quarter	24-hr composite
Endothall Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Endrin	0.128	0.550	N/A	N/A	Once/quarter	24-hr composite
Ethalfuralin (2)	0.00273	0.00805	N/A	N/A	Once/quarter	24-hr composite
Ethion	0.0393	0.138	N/A	N/A	Once/quarter	24-hr composite
Fenarimol	0.903	2.550	N/A	N/A	Once/quarter	24-hr composite
Fensulfothion	0.191	0.370	N/A	N/A	Once/quarter	24-hr composite
Fenthion	0.237	0.458	N/A	N/A	Once/quarter	24-hr composite
Fenvalerate	0.0520	0.135	N/A	N/A	Once/quarter	24-hr composite
Heptachlor	0.0725	0.220	N/A	N/A	Once/quarter	24-hr composite
Isopropalin (2)	0.0623	0.177	N/A	N/A	Once/quarter	24-hr composite
KN Methyl (10)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Linuron	0.0485	0.0673	N/A	N/A	Once/quarter	24-hr composite
Malathion	0.00239	0.00588	N/A	N/A	Once/quarter	24-hr composite
MCPA Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
MCPP Salts and Esters	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Merphos	0.140	0.288	N/A	N/A	Once/quarter	24-hr composite
Methamidophos	0.189	0.365	N/A	N/A	Once/quarter	24-hr composite
Methomyl	0.0440	0.0955	N/A	N/A	Once/quarter	24-hr composite
Methoxychlor	0.0328	0.0808	N/A	N/A	Once/quarter	24-hr composite
Metribuzin	0.176	0.340	N/A	N/A	Once/quarter	24-hr composite
Mevinphos	0.00128	0.00360	N/A	N/A	Once/quarter	24-hr composite
Nabam	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Nabonate	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Naled	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Norflurazon	0.00775	0.0180	N/A	N/A	Once/quarter	24-hr composite
Organo-tin pesticides (4)	0.186	0.430	N/A	N/A	Once/quarter	24-hr composite
Parathion	0.00858	0.0193	N/A	N/A	Once/quarter	24-hr composite
Parathion methyl	0.00858	0.0193	N/A	N/A	Once/quarter	24-hr composite
PCNB	0.00475	0.0144	N/A	N/A	Once/quarter	24-hr composite
Pendimethalin	0.0998	0.325	N/A	N/A	Once/quarter	24-hr composite
Permethrin	0.00152	0.00580	N/A	N/A	Once/quarter	24-hr composite
Phorate	0.00234	0.00780	N/A	N/A	Once/quarter	24-hr composite
Phosmet (5)	(1)	(1)	N/A	N/A	Once/quarter	24-hr composite
Prometon	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Prometryn	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Pronamide	0.00503	0.0166	N/A	N/A	Once/quarter	24-hr composite
Propachlor	0.0385	0.129	N/A	N/A	Once/quarter	24-hr composite
Propanil	0.0263	0.0575	N/A	N/A	Once/quarter	24-hr composite

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Mass (lb/day)		Other Units (specify)		Measurement	Sample
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Frequency	Type
Propazine	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Pyrethrin I and II	0.0833	0.310	N/A	N/A	Once/quarter	24-hr composite
Simazine	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Stirofos	0.0338	0.103	N/A	N/A	Once/quarter	24-hr composite
TCMTB	0.0263	0.0973	N/A	N/A	Once/quarter	24-hr composite
Tebuthiuron	0.850	2.445	N/A	N/A	Once/quarter	24-hr composite
Terbacil	2.900	9.575	N/A	N/A	Once/quarter	24-hr composite
Terbufos	0.00315	0.0123	N/A	N/A	Once/quarter	24-hr composite
Terbuthylazine	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Terbutryn	0.0633	0.193	N/A	N/A	Once/quarter	24-hr composite
Toxaphene	0.0928	0.255	N/A	N/A	Once/quarter	24-hr composite
Triadimefon	0.853	1.630	N/A	N/A	Once/quarter	24-hr composite
Trifluralin (2)	0.00273	0.00805	N/A	N/A	Once/quarter	24-hr composite
Vapam (11)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite
Ziram (12)	0.0468	0.144	N/A	N/A	Once/quarter	24-hr composite

Acute Biomonitoring +++**Pimephales promelas (Acute)**

	<u>48-Hr Minimum</u>		
Pass/Fail Lethality (48-Hr NOEC) TEM6C	Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
Survival (48-Hr NOEC) TOM6C	Report %	Once/quarter	24-hr composite
Coefficient of variation TQM6C	Report %	Once/quarter	24-hr composite

Daphnia pulex (Acute)

	<u>48-Hr Minimum</u>		
Pass/Fail Lethality (48-Hr NOEC) TEM3D	Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
Survival (48-Hr NOEC) TOM3D	Report %	Once/quarter	24-hr composite
Coefficient of variation TQM3D	Report %	Once/quarter	24-hr composite

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Mass (lb/day)		Other Units (specify)		Measurement	Sample
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Frequency	Type
pH	N/A	N/A	Minimum 6 s.u.	Maximum 9 s.u.	Three/week	Grab

+ Report monthly average and daily maximum as MGD.

++ See Condition No. 2 of Part III.

+++ See Condition No. 3 of Part III.

++++ See Condition No. 4 of Part III.

(1) No discharge of process wastewater pollutants.

(2) Monitor and report as total Trifluralin.

(3) Pounds of product include Benomyl and any Carbendazim production not converted to Benomyl.

(4) Monitor and report as total tin.

(5) Applies to purification by recrystallization portion of the process.

(6) Potassium N-hydroxymethyl-N-methyldithiocarbamate

(7) Potassium dimethyldithiocarbamate

(8) Sodium dimethyldithiocarbamate

(9) S,S,S-Tributyl phosphorotrithioate

(10) Potassium N-methyldithiocarbamate

(11) Sodium methyldithiocarbamate

(12) Zinc dimethyldithiocarbanate

There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 002, following the final treatment unit.

SECTION B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Compliance is required on the effective date of the permit.

**PART III
OTHER CONDITIONS**

1. The operator of this wastewater treatment facility shall be licensed by the State of Arkansas in accordance with Act 1103 of 1991, Act 556 of 1993, Act 211 of 1971, and Regulation No. 3, as amended.
2. During production of any of the pesticides listed in Part IA of this permit, the permittee shall conduct sampling in accordance with the monitoring requirements listed in Part IA of this permit for the pesticide(s) being produced. A quarterly DMR must be submitted for all pesticides listed in Part IA of this permit, regardless of which pesticide(s) was produced.
3. **WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)**

1. SCOPE AND METHODOLOGY

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL: 002

CRITICAL DILUTION (%): 0.01%

EFFLUENT DILUTION SERIES (%):

10%, 1%, 0.1%, 0.01%, 0.001%

COMPOSITE SAMPLE TYPE: Defined at PART I

TEST SPECIES/METHODS: 40 CFR Part 136

Daphnia pulex acute static renewal 48-hour definitive toxicity test using EPA/600/4-90/027F, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

Pimephales promelas (fathead minnow) acute static

renewal 48-hour definitive toxicity test using EPA/600/4-90/027F, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution above which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur.
- c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- d. Test failure is defined as a demonstration of statistically significant lethal effects to a test species at or below the effluent critical dilution.

2. PERSISTENT LETHALITY

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent).

- a. Part I Testing Frequency Other Than Monthly
 - i. The permittee shall conduct a total of two (2) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The two additional tests shall be conducted monthly during the next two consecutive months. The

permittee shall not substitute either of the two additional tests in lieu of routine toxicity testing. The full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

- ii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.
- iii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall henceforth increase the frequency of testing for this species to once per quarter for the life of the permit.
- iv. The provisions of Item 2.a are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant lethal effects at or below the critical dilution. A TRE may be also be required

due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- i. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.
- ii. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: Daphnia pulex survival test; and fathead minnow survival test.
- iii. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for: Daphnia pulex survival test; and fathead minnow survival test.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

b. Statistical Interpretation

For the Daphnia pulex survival test and the fathead minnow survival test, the statistical analyses used to determine if there is a statisti-

cally significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-600/4-90/027F or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 90% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.

c. Dilution Water

- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;
 - (A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
 - (B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
- ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

- (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
- (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);
- (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and
- (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect two flow-weighted composite samples from the outfall(s) listed at Item 1.a above.
- ii. The permittee shall collect a second composite sample for use during the 24-hour renewal of each dilution concentration the for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping, and/or storage.

- iii. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.
- v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item 1.a above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA/600/4-90/027F, for every valid or

invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART II.C.7 of this permit. The permittee shall submit full reports upon the specific request of the Department. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for review.

- b. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival results for each species during the reporting period. All invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for ADEQ review.
- c. The permittee shall report the following results of each valid toxicity test on DMR for that reporting period in accordance with PART II.D.4 of this permit. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

i. Pimephales promelas (fathead minnow)

- (A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C.
- (B) Report the NOEC value for survival,

Parameter No. TOM6C.

- (C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

ii. Daphnia pulex

- (A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D.
- (B) Report the NOEC value for survival, Parameter No. TOM3D.
- (C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

Monitoring Frequency Reduction

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Daphnia pulex*).
- b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls.

Upon review and acceptance of this information the Department will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the Permit Compliance System section to update the permit reporting requirements.

- c. SURVIVAL FAILURES - If any test fails the survival endpoint at any time during the life of this permit, two monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.
- d. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

5. TOXICITY REDUCTION EVALUATION (TRE)

- a. Within ninety (90) days of confirming lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:

- i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at 1-800-553-6847, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

- ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample

volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 24 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

- iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.);
and
 - iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

- i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
 - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.
- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.
- e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

1. Storm Water Pollution Prevention Plan Requirements

If your facility already has a storm water pollution prevention plan (SWPPP) in place, then you shall continue

the implementation of this SWPPP. If you do not have a SWPPP, then you shall prepare a SWPPP for your facility within 60 days of the effective starting date of this permit. Your SWPPP must be prepared in accordance with good engineering practices. Your SWPPP must:

- i. identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from your facility;
- ii. describe and ensure implementation of practices which you will use to reduce the pollutants in storm water discharges from the facility; and
- iii. assure compliance with the terms and conditions of this permit.

(2) **Contents of Plan**

i. **Pollution Prevention Team**

You must identify the staff individual(s) (by name or title) that comprise the facility's storm water Pollution Prevention Team. Your Pollution Prevention Team is responsible for assisting the facility/plant manager in developing, implementing, maintaining and revising the facility's SWPPP. Responsibilities of each staff individual on the team must be listed.

ii. **Site Description**

Your SWPPP must include the following:

- (a) *Activities at Facility.* Description of the nature of the industrial activity(ies) at your facility;
- (b) *General Location Map.* A general location map (e.g., U.S.G.S. quadrangle, or other map) with enough detail to identify the location of your facility

and the receiving waters within one mile of the facility;

2. *A legible site map identifying the following:*

- (a) directions of storm water flow (e.g., use arrows to show which ways storm water will flow);
- (b) locations of all existing structural BMPs
- (c) locations of all surface water bodies
- (d) locations of potential pollutant sources identified under Part 1.a.iv and where significant materials are exposed to precipitation;
- (e) location where major spills or leaks identified under Part 1.a.v have occurred;
- (f) locations of the following activities where such activities are exposed to precipitation: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, and liquid storage tanks;
- (g) locations of storm water outfalls and an approximate outline of the area draining to each outfall;
- (h) location and description of non-storm water discharges;
- (i) locations of the following activities where such activities are exposed to precipitation: processing and storage

areas; access roads, rail cars and tracks; the location of transfer of substance in bulk; and machinery;

- (j) location and source of runoff from adjacent property containing significant quantities of pollutants of concern to the facility (an evaluation of how the quality of the runoff impacts your storm water discharges may be included).

iii. Receiving Waters and Wetlands

You must provide the name of the nearest receiving water(s), including intermittent streams, dry sloughs, arroyos and the areal extent and description of wetland or other "special aquatic sites" that may receive discharges from your facility.

iv. Summary of Potential Pollutant Source

You must identify each separate area at your facility where industrial materials or activities are exposed to storm water. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. For each, separate area identified, the description must include:

1. *Activities in Area.* A list of the activities (e.g., material storage, equipment fueling and cleaning, cutting steel beams); and
2. *Pollutants.* A list of the associated pollutant(s) or pollutant parameter(s) (e.g.,

crankcase oil, iron, biochemical oxygen demand, pH, etc.) For each activity. The pollutant list must include all significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of three (3) years before being covered under this permit and the present.

v. **Spills and Leaks**

1. You must clearly identify areas where potential spills and leaks, which can contribute pollutants to storm water discharges, can occur, and their accompanying drainage points. For areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility to be covered under this permit, you must provide a list of significant spills and leaks of toxic or hazardous pollutants that occurred during the three (3) year period prior to the starting date of this permit. Your list must be updated if significant spills or leaks occur in exposed areas of your facility during the time you are covered by the permit.
2. Significant spills and leaks include, but are not limited to releases of oil or hazardous substances in excess of quantities that are reportable under CWA §311 (see 40 CFR 110.10 AND 40 CFR 117.21) or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Significant spills may also include releases of oil or hazardous substances that are not in excess of reporting requirements.

vi. **Sampling Data**

You must provide a summary of existing storm water discharge sampling data taken at your facility.

All storm water sampling data collected during the term of this permit must also be summarized and included in this part of the SWPPP.

vii. **Storm Water Controls**

1. *Description of Existing and Planned BMPs.*
Describe the type and location of existing non-structural and structural best management practices (BMPs) selected for each of the areas where industrial materials or activities are exposed to storm water. All the areas identified in Part 1.a.ii should have a BMP(s) identified for the area's discharges. For areas where BMPs are not currently in place, describe appropriate BMPs that you will use to control pollutants in storm water discharges. Selection of BMPs should take into consideration:
 - (a) the quantity and nature of the pollutants, and their potential to impact the water quality of receiving waters;
 - (b) opportunities to combine the dual purposes of water quality protection and local flood control benefits (including physical impacts of high flows on streams - e.g., bank erosion, impairment of aquatic habitat, etc.);
 - (c) opportunities to offset the impact impervious areas of the facility on ground water recharge and base flows in local streams (taking into account the potential for ground water contamination.)
2. **BMP Types to be Considered.** The following types of structural, non-structural and other BMPs must be considered for implementation at

your facility. Describe how each is, or will be, implemented. This requirement may have been fulfilled with area-specific BMPs identified under Part 1.a.vii.(1), in which case the previous descriptions are sufficient. However, many of the following BMPs may be more generalized or non site-specific and therefore not previously considered. If you determine that any of these BMPs are not appropriate for your facility, you must include an explanation of why they are not appropriate. The BMP examples listed below are not intended to be an exclusive list of BMPs that you may use. You are encourage to keep abreast of new BMPs or new applications of existing BMPs to find the most cost effective means of permit compliance for your facility. If BMPs are being used or planned at the facility which are not listed here (e.g., replacing a chemical with a less toxic alternative, adopting a new or innovative BMP, etc.), include descriptions of them in this section of the SWPPP.

3. Non-Structural BMPs

- (i) *Good Housekeeping:* You must keep all exposed areas of the facility in a clean, orderly manner where such exposed areas could contribute pollutants to storm water discharges. Common problem areas include: around trash containers, storage areas and loading docks. Measures must also include: a schedule for regular pickup and disposal of garbage and waste materials; routine inspections for leaks and conditions of drums, tanks and containers.

- (ii) *Minimizing Exposure:* Where practicable, industrial materials and activities should be protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff.

- (iii) *Preventive Maintenance:* You must have a preventive maintenance program which includes timely inspection and maintenance of storm water management devices, (e.g., cleaning oil/water separators, catch basins) as well as inspecting, testing, maintaining and repairing facility equipment and systems to avoid breakdowns or failures that may result in discharges of pollutants to surface waters.

- (iv) *Spill Prevention and Response Procedures:* You must describe the procedures which will be followed for cleaning up spills or leaks. Those procedures, and necessary spill response equipment, must be made available to those employees that may cause or detect a spill or leak. Where appropriate, you must explain existing or planned material handling procedures, storage requirements, secondary containment, and equipment (e.g., diversion valves), which are intended to minimize spills or leaks at the facility. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable RCRA regulations at

40 CFR Part 264 and 40 CFR Part
265.

(b) *Routine Facility Inspections:* In addition to or as part of the comprehensive site evaluation required under Part 1.f, you must have qualified facility personnel inspect all areas of the facility where industrial materials or activities are exposed to storm water. The inspections must include an evaluation of existing storm water BMPs. Your SWPPP must identify how often these inspections will be conducted. You must correct any deficiencies in implementation of your SWPPP you find as soon as practicable, but not later than within 14 days of the inspection. You must document in your SWPPP the results of your inspections and the corrective actions you took in response to any deficiencies or opportunities for improvement that you identify.

(i) *Employee Training:* You must describe the storm water employee training program for the facility. The description should include the topics to be covered, such as spill response, good housekeeping and material management practices, and must identify periodic dates (e.g., every 6 months during the months of July and January) for such training. You must provide employee training for all employees that work in areas where industrial materials or activities are exposed to storm water, and for employees that are responsible for implementing activities identified in the SWPPP (e.g., inspectors,

maintenance people). The employee training should inform them of the components and goals of your SWPPP.

4. Structural BMPs

(a) *Sediment and Erosion Control:* You must identify the areas at your facility which, due to topography, land disturbance (e.g., construction), or other factors, have a potential for significant soil erosion. You must describe the structural, vegetative, and/or stabilization BMPs that you will be implementing to limit erosion.

(i) *Management of Runoff:* You must describe the traditional storm water management practices (permanent structural BMPs other than those which control the generation or source(s) of pollutants) that currently exist or that are planned for your facility. These types of BMPs typically are used to divert, infiltrate, reuse, or otherwise reduce pollutants in storm water discharges from the site. Factors to consider when you are selecting appropriate BMPs should include: 1) the industrial materials and activities that are exposed to storm water, and the associated pollutant potential of those materials activities; and 2) the beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters. Structural measures should

be placed on upland soils, avoiding wetlands and flood plains, if possible. Structural BMPs may require a separate permit under section 404 of the CWA before installation begins.

- (ii) *Example BMPs:* BMPs you could use include but are not limited to: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (which combine several practices).

5. Other Controls

No solid materials, including floatable debris, may be discharged to waters of the United States, except as authorized by a permit issued under section 404 of the CWA. Off-site vehicle tracking of raw, final, or waste materials or sediments, and the generation of dust must be minimized. Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas must be minimized. Velocity dissipation devices must be placed at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

(3) **Maintenance**

All BMPs you identify in your SWPPP must be maintained in effective operating condition. If site inspections required by Part 1.a.vii.(3)(e) identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. In the case of non-structural BMPs, the effectiveness of the BMP must be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

(4) **Non-Storm Water Discharges**

Certification of Non-Storm Water Discharges

Your SWPPP must include a certification that all discharges (i.e., outfalls) have been tested or evaluated for the presence of non-storm water. The certification must be signed in accordance with Part V.I.H of the individual permit, and include:

- i. the date of any testing and/or evaluation;
- ii. identification of potential significant sources of non-storm water at the site;
- iii. a description of the results of any test and/or evaluation for the presence of non-storm water discharges;
- iv. a description of the evaluation criteria or testing method used; and
- v. a list of the outfalls or onsite drainage points that were directly observed during the test.

If you are unable to provide the certification required (testing for non-storm water discharges), you must notify the Director 180 days after the effective starting date of this permit to be covered by this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification must describe:

1. reason(s) why certification was not possible;
2. the procedure of any test attempted;
3. the results of such test or other relevant observations; and
4. potential sources of non-storm water discharges to the storm sewer.
5. A copy of the notification must be included in the SWPPP at the facility. Non-storm water discharges to waters of the United States which are not authorized by an NPDES permit are unlawful, and must be terminated.

(5) **Allowable Non-storm Water Discharges**

Certain sources of non-storm water are allowable under this permit. In order for these discharges to be allowed, your SWPPP must include:

- i. identification of each allowable non-storm water source;
- ii. the location where it is likely to be discharged; and
- iii. descriptions of appropriate BMPs for each source.
- iv. Except for flows from fire fighting activities, you must identify in your SWPPP all sources of allowable non-storm water that are discharged under the authority of this permit.
- v. If you include mist blown from cooling towers amongst your allowable non-storm water discharges, you must specifically evaluate the potential for the discharges to be contaminated by chemicals used in the cooling tower and determined that the levels of such chemicals in the discharges would not cause or contribute to a violation of an applicable water quality standard after implementation of the BMPs you have selected to control such discharges.

(6) **Applicable State or Local Plans**

Your SWPPP must be consistent (and updated as necessary to remain consistent) with applicable State and/or local storm water, waste disposal, sanitary sewer or septic system regulations to the extent these apply to your facility and are more stringent than the requirements of this permit.

(7) **Comprehensive Site Compliance Evaluation**

i. **Frequency and Inspectors**

You must conduct facility inspections at least once a year. The inspections must be done by qualified personnel provided by you. The qualified personnel you use may be either your own employees or outside consultants that you have hired, provided they are knowledgeable and possess the skills to assess conditions at your facility that could impact storm water quality and assess the effectiveness of the BMPs you have chosen to use to control the quality of your storm water discharges. If you decide to conduct more frequent inspections, your SWPPP must specify the frequency of inspections.

ii. **Scope of the Compliance Evaluation**

Your inspections must include all areas where industrial materials or activities are exposed to storm water, as identified in Part 1.a.iv, and areas where spills and leaks have occurred within the past 3 years. Inspectors should look for: a) industrial materials, residue or trash on the ground that could contaminate or be washed away in storm water; b) leaks or spills from industrial equipment, drums, barrels, tanks or similar containers; c) offsite tracking of industrial materials or sediment where vehicles enter or exit the site; d) tracking or blowing of raw, final, or waste materials from areas of no exposure to

exposed areas and e) for evidence of, or the potential for, pollutants entering the drainage system. Storm water BMPs identified in your SWPPP must be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they must be inspected to see whether BMPs are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected if possible.

iii. **Follow-up Actions**

Based on the results of the inspections, you must modify your SWPPP as necessary (e.g., show additional controls on map required by Part ?; revise description of controls required by Part ? to include additional or modified BMPs designed to correct problems identified. You must complete revisions to the SWPPP within 14 calendar days following the inspection. If existing BMPs need to be modified or if additional BMPs are necessary, implementation must be completed before the next anticipated storm event. If implementation before the next anticipated storm event is impracticable, they must be implemented as soon as practicable.

iv. **Compliance Evaluation Report**

You must insure a report summarizing the scope of the inspection, name(s) of personnel making the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP is completed and retained as part of the SWPPP for at least three years from the date permit coverage expires or is terminated. Major observations should include: the location(s) of discharges of pollutants from the site; location(s) of BMPs that need to be maintained; location(s) where additional BMPs are needed that

did not exist at the time of inspection. You must retain a record of actions taken in accordance with Part 2, Section C (Retention of Records) of this permit as part of the storm water pollution prevention plan for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance. Where an inspection report does not identify any incidents of non-compliance, the report must contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. Both the inspection report and any reports of follow-up actions must be signed in accordance with Part 2, Section D (Reporting Requirements) of this permit.

v. **Credit As a Routine Facility Inspection**

Where compliance evaluation schedules overlap with inspections required under Part 1.a.vii.(3)(e), your annual compliance evaluation may also be used as one of the Part 1.a.vii.(3)(e), routine inspections.

(8) **Maintaining Updated SWPPP**

You must amend the storm water pollution prevention plan whenever:

- i. there is a change in design, construction, operation, or maintenance at your facility which has a significant effect on the discharge, or potential for discharge, of pollutants from your facility;
- ii. during inspections or investigations by you or by local, State, Tribal or Federal officials it is determined the SWPPP is ineffective in eliminating or significantly minimizing pollutants from sources identified under Part 1.a.iv, or is otherwise not achieving the general objectives of

controlling pollutants in discharges from your facility.

(9) **Signature, plan Review and Making Plans Available**

You must sign your SWPPP in accordance with Part 2, Section D.11, and retain the plan on-site at the facility covered by this permit (see Part 2, Section C.7 for records retention requirements).

- i. You must keep a copy of the SWPPP on-site or locally available to the Director for review at the time of an on-site inspection. You must make your SWPPP available upon request to the Director, a State, Tribal or local agency approving storm water management plans, or the operator of a municipal separate storm sewer receiving discharge from the site. Also, in the interest of public involvement, EPA encourages you to make your SWPPPs available to the public for viewing during normal business hours.
- ii. The Director may notify you at any time that your SWPPP does not meet one or more of the minimum requirements of this permit. The notification will identify provisions of this permit which are not being met, as well as the required modifications. Within thirty (30) calendar days of receipt of such notification, you must make the required changes to the SWPPP and submit to the Director a written certification that the requested changes have been made.
- iii. You must make the SWPPP available to the USFWS or NMFS upon request.

(10) **Additional Requirements for Storm Water Discharges Associated With Industrial Activity From Facilities Subject to EPCRA Section 313 Reporting Requirements.**

Potential pollutant sources for which you have reporting requirements under EPCRA 313 must be

identified in your summary of potential pollutant sources as per Part 1.a.iv. Note this additional requirement only applies to you if you are subject to reporting requirements under EPCRA 313.

Fact Sheet

for renewal of draft NPDES Permit Number AR0036412 to discharge to Waters of the State

1. **PERMITTING AUTHORITY.**

The issuing office is:

Arkansas Department of Environmental Quality
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913

2. **APPLICANT.**

The applicant is:

Cedar Chemical Corporation
49 Phillips Road 311
Helena, AR 72342

3. **PERMIT WRITER.**

The permit writer is:

Shane Byrum
NPDES Branch, Water Division

4. **REASONS FOR PERMIT ISSUANCE.**

The facility currently holds NPDES permit No. AR0036412, with an effective date of November 1, 1996, and an expiration date of October 31, 2001. The permittee has submitted a permit renewal application on April 25, 2001. It is proposed that the current NPDES permit be reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

5. **RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.**

The outfall is located at the following coordinates:

Outfall 002:Latitude : 34° 29' 55"; Longitude: 90° 35' 29"

The receiving waters named:

Mississippi River in Segment 6B of the Mississippi River Basin. The receiving stream is a Water of the State classified for primary

contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

6. **OUTFALL AND TREATMENT PROCESS DESCRIPTION.**

The following is a description of the facility described in the application:

Outfall 002:

- (1) Average flow: 0.1727 MGD, based on the highest monthly average flow during the last two years.
- (2) Type of treatment: chemical oxidation, clarification, neutralization, equalization, polishing pond, alkaline chlorination, and biological oxidation.
- (3) Discharge Description: treated process wastewater, washdown/cleanup water, scrubber water, cooling tower blowdown and condensate, weak acid distillate and storm water

A quantitative and qualitative description of the discharge described in the NPDES Permit Application Forms received April 25, 2001 are available for review.

7. **APPLICANT ACTIVITY.**

The applicant's activities are the production of organic pesticide chemicals and custom organic (non-pesticide) chemicals.

8. **SEWAGE SLUDGE PRACTICES.**

Sludge is not generated by this facility.

9. **PERMIT CONDITIONS.**

The Arkansas Department of Environmental Quality has made a tentative determination to issue a permit for the discharge described in the application. Permit requirements are based on NPDES regulations (40 CFR Parts 122, 124, and Subchapter N) and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et. seq.).

(1) **Final Effluent Limits**

Outfall 002-treated process wastewater, washdown/cleanup water,

scrubber water, cooling tower blowdown and condensate, weak acid distillate and storm water

i. Conventional and/or Toxic Pollutants

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			
	Mass (lbs/day)		Other Units (Specify)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Flow (MGD)	N/A	N/A	N/A	N/A
Biochemical				
Oxygen Demand (BOD5)	89.83	415.95	Report mg/l	Report mg/l
Total Suspended Solids (TSS)	101.26	343.14	Report mg/l	Report mg/l
Chemical Oxygen Demand (COD)	505.50	730.15	Report mg/l	Report mg/l

BAT Limits (Priority Pollutants)

1,1-Dichloroethylene	N/A	N/A	16 µg/l	25 µg/l
1,1,1-Trichloroethane	N/A	N/A	21 µg/l	54 µg/l
1,2-Dichloroethane	N/A	N/A	68 µg/l	211 µg/l
1,2-Dichloropropane	N/A	N/A	153 µg/l	230 µg/l
1,2-Dichlorobenzene	N/A	N/A	77 µg/l	163 µg/l
1,2-trans-Dichloroethylene	N/A	N/A	21 µg/l	54 µg/l
1,3-Dichloropropene	N/A	N/A	29 µg/l	44 µg/l
1,4-Dichlorobenzene	N/A	N/A	15 µg/l	28 µg/l
2-chlorophenol	N/A	N/A	31 µg/l	98 µg/l
2,4-Dichlorophenol	N/A	N/A	39 µg/l	112 µg/l
2,4-Dimethylphenol	N/A	N/A	18 µg/l	36 µg/l
Benzene	N/A	N/A	37 µg/l	136 µg/l
Bromodichloromethane	N/A	N/A	142 µg/l	380 µg/l
Bromomethane	N/A	N/A	142 µg/l	380 µg/l
Chlorobenzene	N/A	N/A	15 µg/l	28 µg/l
Chloromethane	N/A	N/A	86 µg/l	190 µg/l
Cyanide (Total)	N/A	N/A	220 µg/l	640 µg/l
Dibromochloromethane	N/A	N/A	196 µg/l	794 µg/l
Dichloromethane	N/A	N/A	40 µg/l	89 µg/l
Ethylbenzene	N/A	N/A	32 µg/l	108 µg/l
Lead (Total)	N/A	N/A	320 µg/l	690 µg/l
Naphthalene	N/A	N/A	22 µg/l	59 µg/l
Phenol	N/A	N/A	15 µg/l	26 µg/l
Tetrachloroethylene	N/A	N/A	22 µg/l	56 µg/l
Tetrachloromethane	N/A	N/A	18 µg/l	38 µg/l
Toluene	N/A	N/A	26 µg/l	80 µg/l
Tribromomethane	N/A	N/A	196 µg/l	794 µg/l
Trichloromethane	N/A	N/A	21 µg/l	46 µg/l

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			
	Mass (lbs/day)		Other Units (Specify)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max

BAT Limits (Pesticides)

2,4-D	0.0160	0.0490	N/A	N/A
2,4-D Salts and Esters	(1)	(1)	N/A	N/A
2,4-DB Salts and Esters	(1)	(1)	N/A	N/A
Acephate	0.00493	0.0160	N/A	N/A
Acifluorfen	14.880	39.200	N/A	N/A
Alachlor	0.0385	0.129	N/A	N/A
Aldicarb	0.00780	0.0181	N/A	N/A

Ametryn	0.0633	0.193	N/A	N/A
Atrazine	0.0430	0.128	N/A	N/A
Azinphos Methyl	0.353	0.685	N/A	N/A
Benfluralin (2)	0.00273	0.00805	N/A	N/A
Benomyl and Carbendazim (3)	0.224	0.875	N/A	N/A
Bolstar	0.218	0.423	N/A	N/A
Bromacil	2.900	9.575	N/A	N/A
Bromacil, lithium	(1)	(1)	N/A	N/A
Bromoxynil	0.0318	0.0988	N/A	N/A
Bromoxynil octanoate	0.0318	0.0988	N/A	N/A
Busan 40	0.0468	0.144	N/A	N/A
Busan 85	0.0468	0.144	N/A	N/A
Butachlor	0.0385	0.130	N/A	N/A
Captafol	0.0000328	0.000106	N/A	N/A
Carbam-S	0.0468	0.144	N/A	N/A
Carbaryl	0.0183	0.0400	N/A	N/A
Carbofuran	0.000700	0.00295	N/A	N/A
Chloroneb	0.828	2.0400	N/A	N/A
Chlorothalonil	0.0114	0.0378	N/A	N/A
Chlorpyrifos	0.00608	0.0206	N/A	N/A
Cynazine	0.0833	0.258	N/A	N/A
Dazomet	0.0468	0.144	N/A	N/A
DCPA	0.660	1.948	N/A	N/A
DEF	0.140	0.288	N/A	N/A
Diazinon	0.0280	0.0705	N/A	N/A
Dichlorprop Salts and Esters	(1)	(1)	N/A	N/A
Dichlorvos	0.000738	0.00240	N/A	N/A
Dinoseb	35.750	118.250	N/A	N/A
Dioxathion	0.323	0.850	N/A	N/A
Disulfoton	0.0948	0.184	N/A	N/A
Diuron	0.104	0.235	N/A	N/A
Endothall Salts and Esters	(1)	(1)	N/A	N/A
Endrin	0.128	0.550	N/A	N/A
Ethalfluralin (2)	0.00273	0.00805	N/A	N/A
Ethion	0.0393	0.138	N/A	N/A
Fenarimol	0.903	2.550	N/A	N/A
Fensulfothion	0.191	0.370	N/A	N/A
Fenthion	0.237	0.458	N/A	N/A
Fenvalerate	0.0520	0.135	N/A	N/A
Heptachlor	0.0725	0.220	N/A	N/A
Isopropalin (2)	0.0623	0.177	N/A	N/A
KN Methyl	0.0468	0.144	N/A	N/A
Linuron	0.0485	0.0673	N/A	N/A
Malathion	0.00239	0.00588	N/A	N/A

Effluent Characteristic

Discharge Limitations

	Mass (lbs/day)		Other Units (Specify)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
MCPA Salts and Esters	(1)	(1)	N/A	N/A
MCPP Salts and Esters	(1)	(1)	N/A	N/A
Merphos	0.140	0.288	N/A	N/A
Methamidophos	0.189	0.365	N/A	N/A
Methomyl	0.0440	0.0955	N/A	N/A
Methoxychlor	0.0328	0.0808	N/A	N/A
Metribuzin	0.176	0.340	N/A	N/A
Mevinphos	0.00128	0.00360	N/A	N/A
Nabam	0.0468	0.144	N/A	N/A
Nabonate	0.0468	0.144	N/A	N/A
Naled	(1)	(1)	N/A	N/A

Norflurazon	0.00775	0.0180	N/A	N/A
Organo-tin pesticides (4)	0.186	0.430	N/A	N/A
Parathion	0.00858	0.0193	N/A	N/A
Parathion methyl	0.00858	0.0193	N/A	N/A
PCNB	0.00475	0.0144	N/A	N/A
Pendimethalin	0.0998	0.325	N/A	N/A
Permethrin	0.00152	0.00580	N/A	N/A
Phorate	0.00234	0.00780	N/A	N/A
Phosmet (5)	(1)	(1)	N/A	N/A
Prometon	0.0633	0.193	N/A	N/A
Prometryn	0.0633	0.193	N/A	N/A
Pronamide	0.00503	0.0166	N/A	N/A
Propachlor	0.0385	0.129	N/A	N/A
Propanil	0.0263	0.0575	N/A	N/A
Propazine	0.0633	0.193	N/A	N/A
Pyrethrin I	0.0833	0.310	N/A	N/A
Pyrethrin II	0.0833	0.310	N/A	N/A
Simazine	0.0633	0.193	N/A	N/A
Stirofos	0.0338	0.103	N/A	N/A
TCMTB	0.0263	0.0973	N/A	N/A
Tebuthiuron	0.850	2.445	N/A	N/A
Terbacil	2.900	9.575	N/A	N/A
Terbufos	0.00315	0.0123	N/A	N/A
Terbuthylazine	0.0633	0.193	N/A	N/A
Terbutryn	0.0633	0.193	N/A	N/A
Toxaphene	0.0928	0.255	N/A	N/A
Triadimefon	0.853	1.630	N/A	N/A
Trifluralin (2)	0.00273	0.00805	N/A	N/A
Vapam	0.0468	0.144	N/A	N/A
Ziram	0.0468	0.144	N/A	N/A

Acute Biomonitoring See Page 24, section i of this fact sheet

			Minimum	Maximum
pH	N/A	N/A	6 s.u.	9 s.u.

ii. **Solids and Foam:** There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

- (1) No discharge of process wastewater pollutants.
- (2) Monitor and report as total Trifluralin.
- (3) Pounds of product include Benomyl and any Carbendazim production not converted to Benomyl.
- (4) Monitor and report as total tin.
- (5) Applies to purification by recrystallization portion of the process.
- (6) Potassium N-hydroxymethyl-N-methyldithiocarbamate
- (7) Potassium dimethyldithiocarbamate
- (8) Sodium dimethyldithiocarbamate
- (9) S,S,S-Tributyl phosphorotrithioate
- (10) Potassium N-methyldithiocarbamate
- (11) Sodium methyldithiocarbamate
- (12) Zinc dimethyldithiocarbamate

10. **BASIS FOR PERMIT CONDITIONS.**

The following is an explanation of the derivation of the conditions of the draft permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the tentative decisions as required under 40 CFR 124.7 (48 FR 1413, April 1, 1983).

(1) **Technology-Based versus Water Quality-Based Effluent Limitations and Conditions**

Following regulations promulgated at 40 CFR Part 122.44 (1) (2) (ii), the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent.

(2) **Technology-Based Effluent Limitations and/or Conditions**

i. **General Comments**

Regulations promulgated at 40 CFR Part 122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines, or on a combination of the two.

ii. **Applicable Effluent Limitations Guidelines or Best Professional Judgement of the Permit Writer**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines promulgated under 40 CFR Part 455.22, 455.24, Subpart A - Organic Pesticide Chemicals Manufacturing Subcategory, and under 40 CFR Part 414.81, Subpart H - Specialty Organic Chemicals Subcategory.

40 CFR Part 455, Pesticide Chemicals, contains promulgated effluent guidelines which are based on the production of organic pesticide chemicals.

40 CFR Part 414-Subpart H, Specialty Organic Chemicals, contains promulgated effluent guidelines which are based on the process wastewater flow subject to this subpart and the concentrations listed in this subpart. A flow rate of 345 gpd is used to calculate limits under this subpart.

iii. **Process wastewater (Outfall 002)**

The production data submitted with the reapplication was found to agree

with past production data upon which the previous permit has been based. The present technology-based limits and monitoring requirements are continued based on the previous NPDES permit, 40 CFR Part 455, 40 CFR Part 414, and 40 CFR Part 122.44(l). These calculations are shown below.

BAT limitations for priority pollutants were changed to the values specified in Table 4 to Part 455 since this facility uses biological treatment (i.e. aerated lagoon). Previous permit erroneously used values found in Table 5 to Part 455 which are applicable to facilities that do not use biological treatment. In reviewing the past two years of DMR data for this facility, it was determined that the more stringent values found in Table 4 are currently being achieved, therefore a compliance schedule for achieving compliance with the more stringent limitations is not necessary.

Calculations:

Production = 56165 lb/day

Flow = 345 gpd = 0.000345 MGD for Speciality Organic Chemicals

Applicable Effluent Limitations:

40 CFR 455.22, BPT Effluent Limitations

Parameter	Monthly Average (lbs/1000 lbs)	Daily Maximum (lbs/1000 lbs)
COD	9.0	13.0
BOD	1.6	7.4
TSS	1.8	6.1

40 CFR 414.81, BPT Effluent Limitations

Parameter	Monthly Average (mg/l)	Daily Maximum (mg/l)
BOD	45	120
TSS	57	183

Limitations:

A. 40 CFR 455.22-Subpart A

Monthly Average:

Parameter	Production (k lbs/day)	x	EG (lbs/k lbs)	= limits (lb/day)
COD	56.165		9.000	505.50
BOD	56.165		1.600	89.70
TSS	56.165		1.800	101.10

Daily Maximum:

Parameter	Production (k lbs/day)	x	EG (lbs/k lbs)	= limits (lb/day)
COD	56.165		13.000	730.15
BOD	56.165		7.400	415.60
TSS	56.165		6.100	342.61

B. 40 CFR 414.81-Subpart H

Monthly Average:

Parameter	Flow (MGD)	x	EG (mg/l)	x	8.34	= Limit (lb/day)
BOD	0.000345		45		8.34	0.13
TSS	0.000345		57		8.34	0.16

Daily Maximum:

Parameter	Flow (MGD)	x	EG (mg/l)	x	8.34	= Limit (lb/day)
BOD	0.000345		120		8.34	0.35
TSS	0.000345		183		8.34	0.53

Therefore:

Monthly Average:

Parameter	40 CFR 455 (lb/day) + 40 CFR 414 (lb/day)= Limits (lb/day)		
COD	505.50	N/A	505.50
BOD	89.70	0.13	89.83
TSS	101.10	0.16	101.26

Daily Maximum:

Parameter	40 CFR 455 (lb/day) + 40 CFR 414 (lb/day)= Limits (lb/day)		
COD	730.15	N/A	730.15
BOD	415.60	0.35	415.95
TSS	342.61	0.53	343.14

Pesticide Limitations

Emission factors presented in **Table 2 of 40 CFR 455, BAT Effluent Limits** were used for all pesticides in conjunction with the following production levels to calculate the lb/day emission limits in the permit:

Pesticide	Production Rate (lb/day)
Acifluorfen	16,000
Diuron	7,454
Propanil	54,254
All Other Part 455 Pesticides	25,000

Table 2 to Part 455-Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT)		
	Pounds of pollutant per 1000 lbs. product	
Pesticide	Daily Maximum	Monthly Average
2,4-D	1.97 x 10 ⁻³	6.40 x 10 ⁻⁴

Table 2 to Part 455-Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT)		
	Pounds of pollutant per 1000 lbs. product	
Pesticide	Daily Maximum	Monthly Average
2,4-D Salts and Esters	(1)	(1)
2,4-DB Salts and Esters	(1)	(1)
Acephate	6.39×10^{-4}	1.97×10^{-4}
Acifluorfen	2.45	0.93
Alachlor	5.19×10^{-3}	1.54×10^{-3}
Aldicarb	7.23×10^{-4}	3.12×10^{-4}
Ametryn	7.72×10^{-3}	2.53×10^{-3}
Atrazine	5.12×10^{-3}	1.72×10^{-3}
Azinphos Methyl	2.74×10^{-2}	1.41×10^{-2}
Benfluralin (2)	3.22×10^{-4}	1.09×10^{-4}
Benomyl and Carbendazim (3)	3.50×10^{-2}	8.94×10^{-3}
Bolstar	1.69×10^{-2}	8.72×10^{-3}
Bromacil	3.83×10^{-1}	1.16×10^{-1}
Bromacil, lithium	(1)	(1)
Bromoxynil	3.95×10^{-3}	1.27×10^{-3}
Bromoxynil octanoate	3.95×10^{-3}	1.27×10^{-3}
Busan 40 (6)	5.74×10^{-3}	1.87×10^{-3}
Busan 85 (7)	5.74×10^{-3}	1.87×10^{-3}
Butachlor	5.19×10^{-3}	1.54×10^{-3}
Captafol	4.24×10^{-6}	1.31×10^{-6}
Carbam-S (8)	5.74×10^{-3}	1.87×10^{-3}
Carbaryl	1.6×10^{-3}	7.3×10^{-4}
Carbofuran	1.18×10^{-4}	2.80×10^{-5}

Table 2 to Part 455-Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT)		
	Pounds of pollutant per 1000 lbs. product	
Pesticide	Daily Maximum	Monthly Average
Chloroneb	8.16×10^{-2}	3.31×10^{-2}
Chlorothalonil	1.51×10^{-3}	4.57×10^{-4}
Chlorpyrifos	8.25×10^{-4}	2.43×10^{-4}
Cyanazine	1.03×10^{-2}	3.33×10^{-3}
Dazomet	5.74×10^{-3}	1.87×10^{-3}
DCPA	7.79×10^{-2}	2.64×10^{-2}
DEF (9)	1.15×10^{-2}	5.58×10^{-3}
Diazinon	2.82×10^{-3}	1.12×10^{-3}
Dichlorprop Salts and Esters	(1)	(1)
Dichlorvos	9.6×10^{-5}	2.95×10^{-5}
Dinoseb	4.73	1.43
Dioxathion	3.40×10^{-2}	1.29×10^{-2}
Disulfoton	7.33×10^{-3}	3.79×10^{-3}
Diuron	3.15×10^{-2}	1.4×10^{-2}
Endothall Salts and Esters	(1)	(1)
Endrin	2.2×10^{-2}	5.1×10^{-3}
Ethalfluralin (2)	3.22×10^{-4}	1.09×10^{-4}
Ethion	5.51×10^{-3}	1.57×10^{-3}
Fenarimol	1.02×10^{-1}	3.61×10^{-2}
Fensulfothion	1.48×10^{-2}	7.64×10^{-3}
Fenthion	1.83×10^{-2}	9.45×10^{-3}
Fenvalerate	5.40×10^{-3}	2.08×10^{-3}
Heptachlor	8.8×10^{-3}	2.9×10^{-3}

Table 2 to Part 455-Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT)		
Pesticide	Pounds of pollutant per 1000 lbs. product	
	Daily Maximum	Monthly Average
Isopropalin (2)	7.06×10^{-3}	2.49×10^{-3}
KN Methyl (10)	5.74×10^{-3}	1.87×10^{-3}
Linuron	2.69×10^{-3}	1.94×10^{-3}
Malathion	2.35×10^{-4}	9.55×10^{-5}
MCPA Salts and Esters	(1)	(1)
MCPP Salts and Esters	(1)	(1)
Merphos	1.15×10^{-2}	5.58×10^{-3}
Methamidophos	1.46×10^{-2}	7.53×10^{-3}
Methomyl	3.82×10^{-3}	1.76×10^{-3}
Methoxychlor	3.23×10^{-3}	1.31×10^{-3}
Metribuzin	1.36×10^{-2}	7.04×10^{-3}
Mevinphos	1.44×10^{-4}	5.10×10^{-5}
Nabam	5.74×10^{-3}	1.87×10^{-3}
Nabonate	5.74×10^{-3}	1.87×10^{-3}
Naled	(1)	(1)
Norflurazon	7.20×10^{-4}	3.10×10^{-4}
Organo-tin pesticides (4)	1.72×10^{-2}	7.42×10^{-3}
Parathion	7.72×10^{-4}	3.43×10^{-4}
Parathion methyl	7.72×10^{-4}	3.43×10^{-4}
PCNB	5.75×10^{-4}	1.90×10^{-4}
Pendimethalin	1.30×10^{-2}	3.99×10^{-3}
Permethrin	2.32×10^{-4}	6.06×10^{-5}
Phorate	3.12×10^{-4}	9.37×10^{-5}

Table 2 to Part 455-Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT)		
Pesticide	Pounds of pollutant per 1000 lbs. product	
	Daily Maximum	Monthly Average
Phosmet (5)	(1)	(1)
Prometon	7.72×10^{-3}	2.53×10^{-3}
Prometryn	7.72×10^{-3}	2.53×10^{-3}
Pronamide	6.64×10^{-4}	2.01×10^{-4}
Propachlor	5.19×10^{-3}	1.54×10^{-3}
Propanil	1.06×10^{-3}	4.84×10^{-4}
Propazine	7.72×10^{-3}	2.53×10^{-3}
Pyrethrin I	1.24×10^{-2}	3.33×10^{-3}
Pyrethrin II	1.24×10^{-2}	3.33×10^{-3}
Simazine	7.72×10^{-3}	2.53×10^{-3}
Stirofos	4.10×10^{-3}	1.35×10^{-3}
TCMTB	3.89×10^{-3}	1.05×10^{-3}
Tebuthiuron	9.78×10^{-2}	3.40×10^{-2}
Terbacil	3.83×10^{-1}	1.16×10^{-1}
Terbufos	4.92×10^{-4}	1.26×10^{-4}
Terbuthylazine	7.72×10^{-3}	2.53×10^{-3}
Terbutryn	7.72×10^{-3}	2.53×10^{-3}
Toxaphene	1.02×10^{-2}	3.71×10^{-3}
Triadimefon	6.52×10^{-2}	3.41×10^{-2}
Trifluralin (2)	3.22×10^{-4}	1.09×10^{-4}
Vapam (11)	5.74×10^{-3}	1.87×10^{-3}
Ziram (12)	5.74×10^{-3}	1.87×10^{-3}

- (1) No discharge of process wastewater pollutants.
 (2) Monitor and report as total Trifluralin.

- (3) Pounds of product include Benomyl and any Carbendazim production not converted to Benomyl.
- (4) Monitor and report as total tin.
- (5) Applies to purification by recrystallization portion of the process.
- (6) Potassium N-hydroxymethyl-N-methyldithiocarbamate
- (7) Potassium dimethyldithiocarbamate
- (8) Sodium dimethyldithiocarbamate
- (9) S,S,S-Tributyl phosphorotrithioate
- (10) Potassium N-methyldithiocarbamate
- (11) Sodium methyldithiocarbamate
- (12) Zinc dimethyldithiocarbamate

iv. **Stormwater runoff**

Effluent limitations guidelines have not been promulgated for discharges of this sort. Therefore, under the authority of Section 402(a)(1) of the Clean Water Act and State laws, the State has developed a permit on a case-by-case basis. Storm water pollution prevention plan requirements are included.

c. **State Water Quality Numerical Standards Based Limitations**

i. **Conventional and Non-Conventional Pollutants**

pH limitations are continued from the previous permit.

ii. **Toxics Pollutants-Priority Pollutant Scan (PPS)**

1. **General Comments**

Effluent limitations and/or conditions established in the draft permit are in compliance with the Arkansas Water Quality Standards and the applicable Water Quality Management Plan.

2. **Post Third Round Policy and Strategy**

Section 101 of the Clean Water Act (CWA) states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited...". To insure that the CWA's prohibitions on toxic discharges are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations by Toxic Pollutants" (49 FR 9016-9019, 3/9/84). In support of the national policy, Region 6 adopted the "Policy for post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. The Regional policy and strategy are designed to insure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State water quality standard resulting in non-conformance

with the provisions of 40 CFR Part 122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

3. Implementation

The State of Arkansas is currently implementing EPA's Post Third-Round Policy in conformance with the EPA Regional strategy. The 5-year NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, or where there are no applicable technology-based limits, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards from the Regulation No. 2 are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

4. Priority Pollutant Scan

In accordance with the regional policy ADEQ has reviewed and evaluated the effluent analysis submitted by the permittee on April 25, 2001. The following steps were used in evaluating the potential toxicity of each analyzed pollutant:

- (a) The results were evaluated and compared to EPA's Minimum Quantification Levels (MQLs) to determine the potential presence of a respective toxic pollutant. Those pollutants which are greater than or equal to the MQLs are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is necessary.
- (b) Those pollutants with one datum shown as "non-detect" (ND), provided the level of detection is equal to or lower than MQL, are determined to be not potentially present in the effluent and eliminated from further evaluation.
- (c) Those pollutants with a detectable value even if below the MQL are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is necessary.

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards, Reg. No. 2 and with the aquatic toxicity, human health, and drinking water criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)". The following expression was used to calculate the pollutant instream waste concentration (IWC):

$$IWC = ((C_e \times Q_e) + (C_b \times Q_b)) / (Q_e + Q_b)$$

where:

IWC = instream concentration of pollutant after mixing with receiving stream ($\mu\text{g}/\text{l}$)

C_e = pollutant concentration in effluent ($\mu\text{g}/\text{l}$)

Q_e = effluent flow of facility (cfs)

C_b = background concentration of pollutant in receiving stream ($\mu\text{g}/\text{l}$)

Q_b = background flow of receiving stream (cfs)

The following values were used in the IWC calculations:

C_e = varies with pollutant. A single value from the Priority Pollutant Screen (PPS) submitted by the permittee as part of the NPDES permit application or the geometric mean of a group of data points (less than 20 data points) is multiplied by a factor of 2.13. This factor is based on EPA's Region VI procedure (See attachment IV of Continuing Planning Process (CPP)) to extrapolate limited data sets to better evaluate the potential toxicity for higher effluent concentrations to exceed water quality standards. This procedure employs a statistical approach which yields an estimate of a selected upper percentile value (the 95th percentile) of an effluent data set which would be expected to exceed 95% of effluent concentrations in a discharge. If 20 or more data points during the last two years are available, do not multiply by 2.13, but instead use the maximum reported values.

Q_e = 0.1727 MGD = 0.267 cfs, based on highest monthly average flow from the industry during the last two (2) years

C_b = 0 $\mu\text{g}/\text{l}$

Q_b = (See below):

(i) Aquatic Toxicity

Chronic Toxicity: Flow = 30,000 cfs, for comparison with chronic aquatic toxicity. This flow is 25 percent of the 7-day, 10-year low-flow (7Q10) for the receiving stream. The 7Q10 of 120,000 cfs is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map.

Acute Toxicity: Flow = 7200 cfs, for comparison with

acute aquatic toxicity. This flow is 6 percent of the 7Q10 for the receiving stream.

(ii) Bioaccumulation

Flow = 176508.2 cfs, for comparison with bioaccumulation criteria. This flow is the harmonic mean of the receiving stream which is based on EPA's STORET (Storage and retrieval), Water Quality Data Base System, utilizing ADEQ accumulated data for Station FRA01 (see Attachment 4).

(iii) Drinking Water

Flow = 120000 cfs, for comparison with drinking water criteria. This flow is the 7Q10 for the receiving stream.

The following values were used to determine limits for the pollutants:

Hardness = 146.19 mg/l, (see Attachment 4).

pH = 8.24 s.u., based on compliance data from Arkansas Water Quality Inventory Report" (see Attachment 4).

5. Water Quality Standards for Metals and Cyanide

Standards for Chromium (VI), Mercury, Selenium, and Cyanide are expressed as a function of the pollutant's water-effect ratio (WER), while standards for cadmium, chromium (III), copper, lead, nickel, silver, and zinc are expressed as a function of the pollutant's water-effect ratio, and as a function of hardness.

The **Water-effect ratio** (WER) is assigned a value of 1.0 unless scientifically defensible study clearly demonstrates that a value less than 1.0 is necessary or a value greater than 1.0 is sufficient to fully protect the designated uses of the receiving stream from the toxic effects of the pollutant.

The WER approach compares bioavailability and toxicity of a specific pollutant in receiving water and in laboratory test water. It involves running toxicity tests for at least two species, measuring LC50 for the pollutant using the local receiving water collected from the site where the criterion is being implemented, and laboratory toxicity testing water made comparable to the site water in terms of chemical hardness. The ratio between site water and lab water LC50 is used to adjust the national acute and chronic criteria to site specific values.

6. Conversion of Dissolved Metals Criteria for Aquatic Life to

Total Recoverable Metal

Metals criteria established in Regulation No. 2 for aquatic life protection are based on dissolved metals concentrations and hardness values (See Page 6 of **Attachment 1**). However, Federal Regulations cited at 40 CFR 122.45(c) require that effluent limitations for metals in NPDES permits be expressed as total recoverable (See Pages 1 and 6 of **Attachment 1**). Therefore, a dissolved to the total recoverable metal conversion must be implemented. This involves determining a linear partition coefficient for the metal of concern and using this coefficient to determine the fraction of metal dissolved, so that the dissolved metal ambient criteria may be translated to a total effluent limit. The formula for converting dissolved metals to total recoverable metals for streams and lakes are provided in **Attachment 2** and Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR 131.36.

7. **Results of the comparison of the submitted information with the appropriate water quality standards and criteria**

ADEQ has determined from the information submitted by the permittee that no water quality standards or Gold Book criteria are exceeded. Therefore, no permit action is necessary to maintain these standards or criteria (See **Attachment 1**.)

Additionally, discharge of priority pollutants equivalent to the BAT effluent limitations in Table 4 of 40 CFR 455, subpart A shows no violation of Water Quality Standards (see Attachment 5).

(a) **Aquatic Toxicity**

(i) **Pollutants with numerical water quality standards**

ADEQ has determined from the information submitted by the permittee that there is not a reasonable potential for the discharge to cause an instream excursion above the acute and/or chronic numeric standards as specified in the Interim Final Rule published in the Federal Register on May 4, 1995 and/or Arkansas Water Quality Standards, Reg. No. 2 (See **Attachment 1**.)

(ii) **Pollutants without applicable water quality standards**

ADEQ has determined from the information submitted by the permittee that there is not a reasonable potential for the discharge to cause an instream excursion above the acute and/or chronic criteria as specified

in the Gold Book (See **Attachment 1.**)

(b) **Human Health (Bioaccumulation) Limits**

(i) **Pollutants with numerical water quality standards**

ADEQ has determined from the information submitted by the permittee that there is not a reasonable potential for the discharge to cause an instream excursion above the state numeric bioaccumulation standards as specified in Section 6(H) of the AWQS, Regulation No. 2 (See **Attachment 1.**)

(ii) **Pollutants without applicable water quality standards**

ADEQ has determined from the information submitted by the permittee that there is not reasonable potential for the discharge to cause exceedance of bioaccumulation criterion as specified in the Gold Book (see Attachment 1).

(c) **Drinking Water Supply Protection**

ADEQ has determined from the information submitted by the permittee that there is not a reasonable potential for the discharge to cause an instream excursion above the drinking water criteria as specified in the Gold Book.

(2) **Final Limitations**

The following effluent limitations or "report" requirements were placed in the permit based on the more stringent of the technology-based, water quality-based or previous NPDES permit limitations:

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l
BOD5 (lb/day)	N/A	N/A	89.83	415.95	89.83	415.95	89.83	415.95
TSS (lb/day)	N/A	N/A	101.26	343.14	101.26	343.14	101.26	343.14
COD (lb/day)	N/A	N/A	505.50	730.15	505.50	730.15	505.50	730.15

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l
1,1-Dichloroethylene	N/A	N/A	16	25	22	60	16	25
1,1,1-Trichloroethane	N/A	N/A	21	54	22	60	21	54
1,2-Dichloroethane	N/A	N/A	68	211	180	574	68	211
1,2-Dichloropropane	N/A	N/A	153	230	196	794	153	230
1,2-Dichlorobenzene	N/A	N/A	77	163	196	794	77	163
1,2-trans-Dichloroethylene	N/A	N/A	21	54	25	66	21	54
1,3-Dichloropropene	N/A	N/A	29	44	196	794	29	44
1,4-Dichlorobenzene	N/A	N/A	15	28	142	380	15	28
2-chlorophenol	N/A	N/A	31	98	N/A	N/A	31	98
2,4-Dichlorophenol	N/A	N/A	39	112	N/A	N/A	39	112
2,4-Dimethylphenol	N/A	N/A	18	36	19	47	18	36
Benzene	N/A	N/A	37	136	57	134	37	136
Bromodichloromethane	N/A	N/A	142	380	142	380	142	380
Bromomethane	N/A	N/A	142	380	142	380	142	380
Chlorobenzene	N/A	N/A	15	28	142	380	15	28
Chloromethane	N/A	N/A	86	190	110	295	86	190
Cyanide (Total)	N/A	N/A	220	640	220	640	220	640
Dibromochloromethane	N/A	N/A	196	794	196	794	196	794
Dichloromethane	N/A	N/A	40	89	36	170	40	89
Ethylbenzene	N/A	N/A	32	108	142	380	32	108
Lead (Total)	N/A	N/A	320	690	320	690	320	690
Naphthalene	N/A	N/A	22	59	19	47	22	59
Phenol	N/A	N/A	15	26	19	47	15	26
Tetrachloroethylene	N/A	N/A	22	56	52	164	22	56
Tetrachloromethane	N/A	N/A	18	38	142	380	18	38
Toluene	N/A	N/A	26	80	28	74	26	80

Parameter	Water Quality- Based		Technology- Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max µg/l
Tribromomethane	N/A	N/A	196	794	196	794	196	794
Trichloromethane	N/A	N/A	21	46	111	325	21	46
2,4-D (lb/day)	N/A	N/A	0.0160	0.0490	N/A	N/A	0.0160	0.0490
2,4-D Salts/Esters (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
2,4-DB Salts/Esters (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Acephate (lb/day)	N/A	N/A	0.00493	0.0160	N/A	N/A	0.00493	0.0160
Acifluorfen (lb/day)	N/A	N/A	14.880	39.200	14.88	39.2	14.880	39.200
Alachlor (lb/day)	N/A	N/A	0.0385	0.129	N/A	N/A	0.0385	0.129
Aldicarb (lb/day)	N/A	N/A	0.00780	0.0181	N/A	N/A	0.00780	0.0181
Ametryn (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Atrazine (lb/day)	N/A	N/A	0.0430	0.128	N/A	N/A	0.0430	0.128
Azinphos Methyl (lb/day)	N/A	N/A	0.353	0.685	N/A	N/A	0.353	0.685
Benfluralin (lb/day) (2)	N/A	N/A	0.00273	0.00805	N/A	N/A	0.00273	0.00805
Benomyl and Carbendazim (lb/day) (3)	N/A	N/A	0.224	0.875	N/A	N/A	0.224	0.875
Bolstar (lb/day)	N/A	N/A	0.218	0.423	N/A	N/A	0.218	0.423
Bromacil (lb/day)	N/A	N/A	2.900	9.575	N/A	N/A	2.900	9.575
Bromacil, lithium (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Bromoxynil (lb/day)	N/A	N/A	0.0318	0.0988	N/A	N/A	0.0318	0.0988
Bromoxynil octanoate (lb/day)	N/A	N/A	0.0318	0.0988	N/A	N/A	0.0318	0.0988
Busan 40 (lb/day) (6)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Busan 85 (lb/day) (7)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Butachlor (lb/day)	N/A	N/A	0.0385	0.130	N/A	N/A	0.385	0.130
Captafol (lb/day)	N/A	N/A	0.0000328	0.000106	N/A	N/A	0.0000328	0.000106
Carbam-S (lb/day) (8)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Carbaryl (lb/day)	N/A	N/A	0.0183	0.0400	N/A	N/A	0.0183	0.0400

Parameter	Water Quality- Based		Technology- Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max µg/l
Carbofuran (lb/day)	N/A	N/A	0.000700	0.00295	N/A	N/A	0.000700	0.00295
Chloroneb (lb/day)	N/A	N/A	0.828	2.0400	N/A	N/A	0.828	2.0400
Chlorothalonil (lb/day)	N/A	N/A	0.0114	0.0378	N/A	N/A	0.0114	0.0378
Chlorpyrifos (lb/day)	N/A	N/A	0.00608	0.0206	N/A	N/A	0.00608	0.0206
Cynazine (lb/day)	N/A	N/A	0.0833	0.258	N/A	N/A	0.0833	0.258
Dazomet (lb/day)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
DCPA (lb/day)	N/A	N/A	0.660	1.948	N/A	N/A	0.660	1.948
DEF (lb/day) (9)	N/A	N/A	0.140	0.288	N/A	N/A	0.140	0.288
Diazinon (lb/day)	N/A	N/A	0.0280	0.0705	N/A	N/A	0.0280	0.0705
Dichlorprop Salts/Esters(lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Dichlorvos (lb/day)	N/A	N/A	0.000738	0.00240	N/A	N/A	0.000738	0.00240
Dinoseb (lb/day)	N/A	N/A	35.750	118.250	N/A	N/A	35.750	118.250
Dioxathion (lb/day)	N/A	N/A	0.323	0.850	N/A	N/A	0.323	0.850
Disulfoton (lb/day)	N/A	N/A	0.0948	0.184	N/A	N/A	0.0948	0.184
Diuron (lb/day)	N/A	N/A	0.104	0.235	0.104	0.235	0.104	0.235
Endothall Salts/Esters (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Endrin (lb/day)	N/A	N/A	0.128	0.550	N/A	N/A	0.128	0.550
Ethalfuralin (lb/day) (2)	N/A	N/A	0.00273	0.00805	N/A	N/A	0.00273	0.00805
Ethion (lb/day)	N/A	N/A	0.0393	0.138	N/A	N/A	0.0393	0.138
Fenarimol (lb/day)	N/A	N/A	0.903	2.550	N/A	N/A	0.903	2.550
Fensulfothion (lb/day)	N/A	N/A	0.191	0.370	N/A	N/A	0.191	0.370
Fenthion (lb/day)	N/A	N/A	0.237	0.458	N/A	N/A	0.237	0.458
Fenvalerate (lb/day)	N/A	N/A	0.0520	0.135	N/A	N/A	0.0520	0.135
Heptachlor (lb/day)	N/A	N/A	0.0725	0.220	N/A	N/A	0.0725	0.220
Isopropalin (lb/day) (2)	N/A	N/A	0.0623	0.177	N/A	N/A	0.0623	0.177
KN Methyl (lb/day) (10)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l
Linuron (lb/day)	N/A	N/A	0.0485	0.0673	N/A	N/A	0.0485	0.0673
Malathion (lb/day)	N/A	N/A	0.00239	0.00588	N/A	N/A	0.00239	0.00588
MCPA Salts/Esters (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
MCPP Salts/Esters (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Merphos (lb/day)	N/A	N/A	0.140	0.288	N/A	N/A	0.140	0.288
Methamidophos (lb/day)	N/A	N/A	0.189	0.365	N/A	N/A	0.189	0.365
Methomyl (lb/day)	N/A	N/A	0.0440	0.0955	N/A	N/A	0.0440	0.0955
Methoxychlor (lb/day)	N/A	N/A	0.0328	0.0808	N/A	N/A	0.0328	0.0808
Metribuzin (lb/day)	N/A	N/A	0.176	0.340	N/A	N/A	0.176	0.340
Mevinphos (lb/day)	N/A	N/A	0.00128	0.00360	N/A	N/A	0.00128	0.00360
Nabam (lb/day)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Nabonate (lb/day)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Naled (lb/day)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Norflurazon (lb/day)	N/A	N/A	0.00775	0.0180	N/A	N/A	0.00775	0.0180
Organo-tin pesticides (lb/day) (4)	N/A	N/A	0.186	0.430	N/A	N/A	0.186	0.430
Parathion (lb/day)	N/A	N/A	0.00858	0.0193	N/A	N/A	0.00858	0.0193
Parathion methyl (lb/day)	N/A	N/A	0.00858	0.0193	N/A	N/A	0.00858	0.0193
PCNB (lb/day)	N/A	N/A	0.00475	0.0144	N/A	N/A	0.00475	0.0144
Pendimethalin (lb/day)	N/A	N/A	0.0998	0.325	N/A	N/A	0.0998	0.325
Permethrin (lb/day)	N/A	N/A	0.00152	0.00580	N/A	N/A	0.00152	0.00580
Phorate (lb/day)	N/A	N/A	0.00234	0.00780	N/A	N/A	0.00234	0.00780
Phosmet (lb/day) (5)	N/A	N/A	(1)	(1)	N/A	N/A	(1)	(1)
Prometon (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Prometryn (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Pronamide (lb/day)	N/A	N/A	0.00503	0.0166	N/A	N/A	0.00503	0.0166

Parameter	Water Quality- Based		Technology- Based/BPJ		Previous NPDES Permit		Draft Permit	
	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max. µg/l	Monthly Avg. µg/l	Daily Max µg/l
Propachlor (lb/day)	N/A	N/A	0.0385	0.129	N/A	N/A	0.0385	0.129
Propanil (lb/day)	N/A	N/A	0.0263	0.0575	0.03	0.06	0.0263	0.0575
Propazine (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Pyrethrin I (lb/day)	N/A	N/A	0.0833	0.310	N/A	N/A	0.0833	0.310
Pyrethrin II (lb/day)	N/A	N/A	0.0833	0.310	N/A	N/A	0.0833	0.310
Simazine (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Stirofos (lb/day)	N/A	N/A	0.0338	0.103	N/A	N/A	0.0338	0.103
TCMTB (lb/day)	N/A	N/A	0.0263	0.0973	N/A	N/A	0.0263	0.0973
Tebuthiuron (lb/day)	N/A	N/A	0.850	2.445	N/A	N/A	0.850	2.445
Terbacil (lb/day)	N/A	N/A	2.900	9.575	N/A	N/A	2.900	9.575
Terbufos (lb/day)	N/A	N/A	0.00315	0.0123	N/A	N/A	0.00315	0.0123
Terbutylazine (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Terbutryn (lb/day)	N/A	N/A	0.0633	0.193	N/A	N/A	0.0633	0.193
Toxaphene (lb/day)	N/A	N/A	0.0928	0.255	N/A	N/A	0.0928	0.255
Triadimefon (lb/day)	N/A	N/A	0.853	1.630	N/A	N/A	0.853	1.630
Trifluralin (lb/day) (2)	N/A	N/A	0.00273	0.00805	N/A	N/A	0.00273	0.00805
Vapam (lb/day) (11)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Ziram (lb/day) (12)	N/A	N/A	0.0468	0.144	N/A	N/A	0.0468	0.144
Acute Biomonitoring	N/A		N/A		Once/quarter		Once/quarter	
pH	6-9 s.u.		6-9 s.u.		6-9 s.u.		6-9 s.u.	

- (1) No discharge of process wastewater pollutants.
- (2) Monitor and report as total Trifluralin.
- (3) Pounds of product include Benomyl and any Carbendazim production not converted to Benomyl.
- (4) Monitor and report as total tin.
- (5) Applies to purification by recrystallization portion of the process.
- (6) Potassium N-hydroxymethyl-N-methyldithiocarbamate
- (7) Potassium dimethyldithiocarbamate
- (8) Sodium dimethyldithiocarbamate

- (9) S,S,S-Tributyl phosphorotrithioate
- (10) Potassium N-methyldithiocarbamate
- (11) Sodium methyldithiocarbamate
- (12) Zinc dimethyldithiocarbamate

i. **Biomonitoring**

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992.

Biomonitoring of the effluent is thereby required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS

FREQUENCY

Acute Biomonitoring

Once/quarter

Requirements for measurement frequency are based on appendix D of CPP.

Since 7Q10 is greater than 100 cfs (ft³/sec) and dilution ratio is greater than 100:1, acute biomonitoring requirements will be included in the permit.

The calculations for dilution used for the acute biomonitoring are as follows:

$$\text{Critical Dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

$$Q_d = \text{Average flow} = 0.1727 \text{ MGD} = 0.267 \text{ cfs}$$

$$7Q_{10} = 120000 \text{ cfs}$$

$$Q_b = \text{Background flow} = 0.1 \times (0.25) \times 7Q_{10} = 3000 \text{ cfs}$$

$$CD = ((0.267) / (0.267 + 3000)) \times 100 = 0.01\%$$

Dilution series based on a factor of 0.75 (See Attachment 6) are as follows:

1. 0.004%
2. 0.006%
3. 0.008%
4. 0.010%
5. 0.013%

However, it is expected that there will be no significant difference between the toxicity results of the above series of dilutions. Therefore, the following dilution series presented below have been chosen to be included in the permit.

Toxicity tests shall be performed in accordance with protocols described in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms", EPA/600/4-90/027. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are **10%, 1%, 0.1%, 0.01%, and 0.001%**. The low-flow effluent concentration (critical dilution) is defined as **0.01%** effluent. The requirement for acute biomonitoring tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be reported according to EPA/600/4-90/027 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further biomonitoring studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if biomonitoring data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in ADEQ Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarized toxicity test submitted by the permittee during the term of the current permit at outfall **002** (See **Attachment 7.**)

j. **Sample Type and Sampling Frequency**

Regulations promulgated at 40 CFR 122.44(i)(1) require permit to establish monitoring requirements which assure compliance with permit limitations. Requirements for sample type and sampling frequency have been based on the current NPDES permit.

k. **Changes from the previously issued permit**

1. Added BAT limits for all pesticides listed in Part 455 Table 2.
2. Part III has been revised.
3. BAT limits for all Part 455 priority pollutants were revised.
4. Monitoring frequency for Phenol was revised.
5. Lead limitations and monitoring added.
6. 2-chlorophenol limitations and monitoring added.
7. 2,4-Dichlorophenol limitations and monitoring added.
8. Reporting units have changed for Benzene.
9. Reporting units have changed for Bromodichloromethane.
10. Reporting units have changed for Cyanide.
11. Reporting units have changed for Dibromochloromethane.
12. Reporting units have changed for Tribromomethane.
13. The facility outfall coordinates have been revised.
14. The interim limits and compliance schedule were removed.
15. Reporting requirements for biomonitoring have changed.
16. Limits for Propanil have changed.
17. Phenol limits and reporting units have changed.
18. 1,1-Dichloroethylene limits and reporting units have changed.
19. 1,1-Trichloroethylene limits and reporting units have changed.
20. 1,2-trans-Dichloroethylene limits and reporting units have changed.
21. 1,2-Dichlorobenzene limits and reporting units have changed.
22. 1,2-Dichloropropane limits and reporting units have changed.
23. 1,2-Dichloroethane limits and reporting units have changed.
24. 1,3-Dichloropropene limits and reporting units have changed.
25. 1,4-Dichlorobenzene limits and reporting units have changed.
26. 2,4-Dimethylphenol limits and reporting units have changed.
27. Chlorobenzene limits and reporting units have changed.
28. Chloromethane limits and reporting units have changed.
29. Dichloromethane limits and reporting units have changed.
30. Ethylbenzene limits and reporting units have changed.
31. Naphthalene limits and reporting units have changed.
32. Tetrachloroethylene limits and reporting units have changed.
33. Tetrachloromethane limits and reporting units have changed.
34. Toluene limits and reporting units have changed.
35. Trichloromethane limits and reporting units have changed.

11. **SCHEDULE OF COMPLIANCE.**

Compliance with final effluent limitations is required by the following schedule: Compliance is required on the effective date of the permit.

12. **OPERATION AND MONITORING.**

The applicant is at all times required to properly operate and maintain the treatment facility; to monitor the discharge on a regular basis; and report the results monthly. The monitoring results will be available to the public.

13. **SOURCES.**

The following sources were used to draft the permit:

- a. NPDES application No. AR0036412 received April 25, 2001.
- b. Arkansas Water Quality Management Plan (WQMP).
- c. Regulation No. 2.
- d. Regulation No. 6.
- e. 40 CFR 122, 125, 455, 414.
- f. NPDES permit file AR0036412.
- g. Discharge Monitoring Reports (DMRs).
- h. "Arkansas Water Quality Inventory Report 2000 (305B)", ADEQ.
- i. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- j. EPA's STORET (Storage and Retrieval), Water Quality Data Base System.
- k. Continuing Planning Process (CPP).
- l. Technical Support Document For Water Quality-based Toxic Control.
- m. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR 131.36.

14. PUBLIC NOTICE.

The public notice describes the procedures for the formulation of final determinations and shall provide for a public comment period of 30 days. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision. A request for a public hearing shall be in writing and shall state the nature of the issue(s) proposed to be raised in the hearing.

A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers, and to the Regional Director of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service prior to the publication of that notice.

15. NPDES POINT OF CONTACT.

For additional information, contact:

Mr. Shane Byrum, Permit Engineer
Arkansas Department of Environmental Quality
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913
Telephone: (501) 682-0622

Image Not
Available

April 5, 2002

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (7000 0600 0026 9359 1431)

Chris McGee, Vice-President of Manufacturing
Cedar Chemical Corporation
49 Phillips Road 311
Helena, AR 72342

RE: Application to Discharge to Waters of the State Permit Number AR0036412

Dear Mr. McGee:

Enclosed is the public notice, Fact Sheet, and a copy of the permit which the Arkansas Department of Environmental Quality has drafted under the authority of the National Pollutant Discharge Elimination System and the Arkansas Water and Air Pollution Control Act. A copy of the final permit will be mailed to you when the Department has made a final permit decision.

Federal law requires that all draft NPDES permits prepared by this Department complete a 30 day public notice period. The enclosed public notice will be published by ADEQ in the local paper of general circulation. Act 163 of 1993 requires the permit applicant to bear the expense of the notice's publication. Therefore, an invoice will be sent to you for the cost of publishing the public notice. Until this Department receives proof of publication and proof of payment of the publication, no further action will be taken on your NPDES permit.

Comments must be received at ADEQ prior to the close of the public comment period as shown in the enclosed public notice. The public comment period will begin on the date of publication and will end no sooner than 30 days from that date.

Under the provisions of federal and state laws and regulations, all persons, including applicants, who believe any condition of a draft permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period. Once a final permit is issued by the Director and becomes effective, the permittee must comply with all terms and conditions of the permit, or be subject to enforcement actions for any instances of noncompliance during the duration of the permit, usually five (5) years. Consequently, **it is imperative that you, as the applicant, thoroughly review the enclosed documentation for accuracy, applicability, and your ability to comply with all conditions therein. Comments must be received at ADEQ prior to the close of the public comment period as shown in the enclosed public notice.**

Should you have any questions concerning any part of the permit, please feel free to contact the Arkansas Department of Environmental Quality, NPDES Branch, at (501) 682-0622.

Sincerely,

Chuck C. Bennett
Chief, Water Division

CCB:sb

Enclosure

Image Not
Available

Arkansas Department of Environmental Quality NPDES authorization to discharge to Waters of the State, permit number AR0036412.

The applicant's mailing address is:

Cedar Chemical Corporation
49 Phillips Road 311
Helena, AR 72342

The discharge from this facility is made into Mississippi River in Segment 6B of the Mississippi River Basin. The receiving stream is a Water of the State classified for primary contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses. The facility is located as follows: Highway 242 South in Section 14, Township 2 South, Range 4 East in Phillips County, Arkansas. Latitude: 34° 31' 13"; Longitude: 90° 39' 10" and the outfall is located at the following coordinates: Outfall 002:Latitude : 34° 29' 55"; Longitude: 90° 35' 29". Sludge is not generated by this facility.

A Fact Sheet is available upon request. Under the standard industrial classification (SIC) code 2869 and 2879 the applicant's activities are the production of organic pesticide chemicals and custom organic (non-pesticide) chemicals.

Changes from the previously issued permit are as follows:

1. Added BAT limits for all pesticides listed in Part 455 Table 2.
2. Part III has been revised.
3. BAT limits for all Part 455 priority pollutants were revised.
4. Monitoring frequency for Phenol was revised.
5. Lead limitations and monitoring added.
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32. Tetrachloroethylene limits and reporting units have changed.
33. Tetrachloromethane limits and reporting units have changed.
34. Toluene limits and reporting units have changed.
35. Trichloromethane limits and reporting units have changed.

ARKANSAS Department of Environmental Quality NPDES AUTHORIZATION
TO DISCHARGE TO Waters of the State, PERMIT NUMBER AR0036412

This is to give notice that the Arkansas Department of Environmental Quality has developed Draft Permit for the following applicant under the National Pollutant Discharge Elimination System and the Arkansas Water and Air Pollution Control Act. Development of the draft permit(s) was based on a preliminary staff review.

Arkansas Department of Environmental Quality NPDES authorization to discharge to Waters of the State, permit number AR0036412.

The applicant's mailing address is:

Cedar Chemical Corporation
49 Phillips Road 311
Helena, AR 72342

The discharge from this facility is made into Mississippi River in Segment 6B of the Mississippi River Basin. The receiving stream is a Water of the State classified for primary contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses. The facility is located on that water as follows: Highway 242 South in Section 14, Township 2 South, Range 4 East in Phillips County, Arkansas. Latitude: 34° 31' 13"; Longitude: 90° 39' 10" and the outfall is located at the following coordinates: Outfall 002:Latitude : 34° 29' 55"; Longitude: 90° 35' 29". Sludge is not generated by this facility.

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32. Tetrachloroethylene limits and reporting units have changed.
33. Tetrachloromethane limits and reporting units have changed.
34. Toluene limits and reporting units have changed.
35. Trichloromethane limits and reporting units have changed.

The permit(s) will become effective on June 1, 2002, unless:

1. Comments are received prior to May 13, 2002, in which case the permit will be effective July 1, 2002.
2. A public hearing is held requiring delay of the effective date.

The ADEQ contact person for submitting written comments, requesting information regarding the draft permit, and/or obtaining copies of the permit and the Fact Sheet is:

Mo Shafii, Acting Permit Section Chief
Arkansas Department of Environmental Quality
Post Office Box 8913
Little Rock, Arkansas 72219-8913
(501) 682-0622

NPDES comments and public hearing procedures may be found at 40 CFR 124.10 and 124.12 (49 Federal Register 14264, April 1, 1983, as amended at 49 Federal Register 38051, September 26, 1984). The period during which written comments on the draft permit may be submitted extends for 30 days from the date of this notice. During the comment period, any interested person may request a public hearing by filing a written request which must state the issues to be raised. A public hearing will be held if ADEQ finds a

significant degree of public interest.

ADEQ will notify the applicant, and each person who has submitted written comments or requested notice, of the final permit decision. A final permit decision means a final decision to issue, deny, modify, revoke and reissue, or terminate a permit. Any interested person who has submitted comments may appeal a final decision by ADEQ in accordance with the Arkansas Department of Environmental Quality Regulation No. 8 (Administrative Procedures).

[PPS]

Attachment 2

Linear Partition Coefficients for Priority Metals in Streams and Lakes*

METAL	STREAMS		LAKES	
	K _{po}	a	K _{po}	a
Arsenic	0.48 X 10 ⁶	-0.73	0.48 X 10 ⁶	-0.73
Cadmium	4.00 X 10 ⁶	-1.13	3.52 X 10 ⁶	-0.92
Chromium**	3.36 X 10 ⁶	-0.93	2.17 X 10 ⁶	-0.27
Copper	1.04 X 10 ⁶	-0.74	2.85 X 10 ⁶	-0.9
Lead***	2.80 X 10 ⁶	-0.8	2.04 X 10 ⁶	-0.53
Mercury	2.90 X 10 ⁶	-1.14	1.97 X 10 ⁶	-1.17
Nickel	0.49 X 10 ⁶	-0.57	2.21 X 10 ⁶	-0.76
Silver****	2.40 X 10 ⁶	-1.03	2.40 X 10 ⁶	-1.03
Zinc	1.25 X 10 ⁶	-0.7	3.34 X 10 ⁶	-0.68

$K_p = K_{po} \times TSS^a$

K_p = Linear Partition Coefficient

TSS = Total Suspended Solids (mg/l)-(See **Attachment 3**)

K_{po} = found from table

a = found from table

$C/C_t = 1/(1+ (K_p \times TSS \times 10^{-6}))$ C/C_t = Fraction of Metal Dissolved

* Delos, C. G., W. L. Richardson, J. V. DePinto, R. B., Ambrose, P. W. Rogers, K. Rygwelski, J. P. St. John, W. J. Shaughnessey, T. A. Faha, W. N. Christie. Technical Guidance for Performing Waste Load Allocations, Book II: Streams and Rivers. Chapter 3:Toxic Substances, for the U. S. Environmental Protection Agency. (EPA-440/4-84-022).

** Linear partition coefficient shall not apply to the Chromium VI numerical criterion. The approved analytical method for Chromium VI measures only the dissolved form. Therefore, permit limits for Chromium VI shall be expressed in the dissolved form. See 40 CFR 122.45(c)(3).

*** Reference page 18 of EPA memo dated March 3, 1992, from Margaret J. Stasikowski(WH-586) to Water management Division Directors, Region I-IX.

**** Texas Environmental Advisory Council, 1994

Attachment 3

TOTAL SUSPENDED SOLIDS (15th PERCENTILE) BY RECEIVING STREAM AND ECOREGION

For direct discharges to the Arkansas, Red, Ouachita, White, and St. Francis Rivers use the following mean values:

TSS (15th percentile)		
Receiving Stream	TSS	Unit
Arkansas River:		
Ft. Smith to Dardanelle Dam	12.0	mg/l
Dardanelle Dam to Terry L&D	10.5	mg/l
Terry L&D to L&D #5	8.3	mg/l
L&D #5 to Mouth	9.0	mg/l
Red River	33	mg/l
Ouachita River:		
above Caddo River	2.0	mg/l
below Caddo River	5.5	mg/l
White River:		
above Beaver Lake	2.5	mg/l
Bull Shoals to Black River	3.3	mg/l
Black River to Mouth	18.5	mg/l
St. Francis River	18	mg/l

For all other discharges use the following ecoregion TSS:

TSS (15th percentile)		
Ecoregion	TSS	Unit
Ouachita	2	mg/l
Gulf Coastal	5.5	mg/l
Delta	8	mg/l
Ozark Highlands	2.5	mg/l
Boston Mountains	1.3	mg/l
Arkansas River Valley	3	mg/l

Attachment 4

Calculations